

AMENDMENT TO THE CLAIMS:

1. (Currently amended) An optical disk drive comprising:
 - an optical pickup ~~for emitting~~ operable to emit a laser to an optical disk as a recording medium, and ~~signal processing~~ to signal-process a reflected light from the optical disk;
 - a servo error signal generation means ~~for generating~~ generator operable to generate a servo error signal of a focusing and tracking servo system from the reflected light;
 - ~~an offset detection means for detecting an offset detector operable to detect an offset~~, which occurs in the servo error signal due to defocusing or detracking of an objective lens in the optical pickup, and ~~obtaining~~ to obtain an offset adjustment value for canceling the offset;
 - ~~an offset adjustment means for adding adjuster operable to provide~~ the offset adjustment value to the servo system to cancel the offset of the servo ~~system~~ system, which is detected by ~~the said offset detection means detector~~;
 - ~~a gain adjustment means for adjusting adjuster operable to adjust~~ the gain of the servo system;
 - ~~a laser power switching means for changing circuit operable to change~~ the power of the laser emitted from the optical pickup;
 - ~~a command means for outputting unit operable to output~~ an offset adjustment command, a gain adjustment command, and a laser power switching command to ~~the said offset adjustment means adjuster, the gain adjustment means said gain adjuster, and the said laser power adjustment means switching circuit~~, respectively;
 - ~~a storage means for holding operable to hold~~ an offset adjustment value, a gain adjustment value, and a laser power, which are to be set in ~~the offset adjustment said offset adjuster, the gain adjustment means said gain adjuster, and the said laser power adjustment means switching circuit~~, respectively; and
 - ~~a driving means for receiving driver operable to receive~~ the servo error signal, and ~~outputting to ouput~~ a driving signal for controlling ~~the said optical pickup; pickup,~~ wherein a first gain adjustment value and a first offset adjustment value to be set in the servo

system are stored in the said storage means, when the laser power emitted from the said optical pickup is a first laser power; power,

~~said optical disk drive being characterized by that wherein~~ a second gain adjustment value to be set in the servo system when a second laser power is emitted from the said optical pickup is obtained by arithmetic operation on the basis of the first gain adjustment value, the second gain adjustment value is set in the ~~gain adjustment means~~ said gain adjuster, and a second offset adjustment value for canceling an offset which occurs in the servo system is obtained, and then, the second laser power, gain adjustment value, and offset adjustment value are stored in the said storage means, and

wherein when the first laser power is switched to the second laser power during the actual operation, ~~the~~ switching of the laser power and ~~the~~ switching from the first gain adjustment value and offset adjustment value to the second gain adjustment value and offset adjustment value are carried out simultaneously.

2. (Currently amended) An optical disk drive as defined in Claim 1, wherein the second gain adjustment value is in proportion to the reciprocal of ~~the a~~ ratio of the second laser power when the first laser power is used as ~~the a~~ reference.

3. (Original) An optical disk drive as defined in Claim 1, wherein the first laser power is a laser power at a reading level, and the second laser power is a laser power at an erasing level.

4. (Currently amended) An optical disk drive comprising:
an optical pickup ~~for emitting~~ operable to emit a laser to an optical disk as a recording medium, and ~~signal processing~~ to signal-process a reflected light from the optical disk;
a servo error signal ~~generation means~~ for generating generator operable to generate a servo error signal of a focusing and tracking servo system from the reflected light;
an offset ~~detection means~~ for detecting detector operable to detect an offset which occurs in the servo error signal due to defocusing or detracking of an objective lens in the said optical pickup,

and obtaining to obtain an offset adjustment value for canceling the offset;

an offset adjustment means for adding adjuster operable to provide the offset adjustment value to the servo system to cancel the offset of the servo system which is detected by the said offset detection means detector;

a gain adjustment means for adjusting adjuster operable to adjust the gain of the servo system;

a laser power switching means for changing circuit operable to change the power of the laser emitted from the said optical pickup;

a command means for outputting unit operable to output an offset adjustment command, a gain adjustment command, and a laser power switching command to the said offset adjustment means adjuster, the said gain adjustment means adjuster, and the said laser power switching means circuit, respectively;

a storage means for holding operable to hold an offset adjustment value, a gain adjustment value, and a laser power, which are to be set in the offset adjustment means said offset adjuster, the gain adjustment means said gain adjuster, and the said laser power switching means circuit, respectively; and

a driving means for receiving driver operable to receive the servo error signal, and outputting to output a driving signal for controlling the said optical pickup; pickup,

wherein a first gain adjustment value and a first offset adjustment value to be set in the servo system are stored in a first storage area provided in the said storage means, when the laser power emitted from the said optical pickup is a first laser power; power,

said optical disk drive being characterized by that, wherein after the first gain adjustment value and offset adjustment value obtained by the an adjustment operation are stored in the said first storage area, the command means said command unit outputs a command for turning off the laser output from the said optical pickup to the laser power switching means circuit and, after the laser output is turned off, second to m-th (m: integer not less than 2) gain adjustment values to be set in the servo system when second to m-th laser powers are emitted from the said optical pickup are obtained by arithmetic operation based on the first gain adjustment value, and the second to m-th

gain adjustment values are set in the gain ~~adjustment means~~ adjuster, and then, second to m-th offset adjustment values for canceling offsets that occur in the servo system are obtained, and the second to m-th laser powers, gain adjustment values, and offset adjustment values are stored in second to m-th storage areas provided in the said storage ~~means~~, respectively, and

wherein during the actual operation, when the laser power is switched from the first laser power to an n-th (n: integer not less than 2 and not larger than m) laser power among the second to m-th laser powers, the switching of the laser power and the switching of the first gain adjustment value and offset adjustment value to the n-th gain adjustment value and offset adjustment value are carried out simultaneously.

5. (Currently amended) An optical disk drive as defined in Claim 4, wherein the second to m-th gain adjustment values are in proportion to the reciprocals of the ratios of the second to m-th laser powers, respectively, when the first laser power is used as the a reference.

6. (Original) An optical disk drive as defined in Claim 4, wherein the first laser power is a laser power at a reading level, and the second to m-th (m: integer not less than 2) laser powers are laser powers at erasing levels.

7. (Currently amended) An optical disk drive comprising:
an optical pickup ~~for emitting~~ operable to emit a laser to an optical disk as a recording medium, and ~~signal processing~~ to signal-process a reflected light from the optical disk;
a tracking error signal ~~generation means~~ for generating ~~generator~~ operable to generate a tracking error signal of a tracking servo from the reflected light;
an offset ~~detection means~~ for detecting ~~detector~~ operable to detect an offset which occurs in the tracking error signal due to detracking of an objective lens in the said optical pickup or deviation of the optical axis of a photodetector, and ~~obtaining to obtain~~ to obtain an offset adjustment value for canceling the offset;
first and second offset ~~adjustment means~~ for adding ~~adjusters~~ operable to add two offset

adjustment values to the tracking error signal to cancel the offset of the tracking error signal which is detected by ~~the offset detection means~~ said offset detector;

a gain adjustment means for adjusting adjuster operable to adjust the gain of the tracking servo;

a laser power switching means for changing circuit operable to change the power of the laser emitted from ~~the~~ said optical pickup;

a command means for outputting unit operable to output an offset adjustment command, a gain adjustment command, and a laser power switching command to ~~the~~ said first and second offset adjustment means adjusters, ~~the~~ gain adjustment means said gain adjuster, and ~~the~~ said laser power switching means circuit, respectively;

a storage means for holding operable to hold two offset adjustment values, a gain adjustment value, and a laser power, which are to be set in ~~the~~ said first and second offset adjustment means adjusters, ~~the~~ gain adjustment means said gain adjuster, and the laser power switching means circuit, respectively; and

a driving means for receiving driver operable to receive the tracking error signal, and outputting to ouput a driving signal for controlling ~~the~~ said optical pickup; pickup,

wherein the offset adjustment and gain adjustment of the tracking servo are carried out after the focusing is turned on in the state where a first laser power is set in ~~the~~ said laser power switching means circuit, and the first offset adjustment value, gain adjustment value, and laser power which are set by the above-described adjustments are stored as first adjustment values in a first storage area provided in ~~the~~ storage means; said storage,

~~said optical disk drive being characterized by that~~, wherein after the first adjustment values obtained by the adjustment operation are stored in ~~the~~ said first storage area, ~~the~~ said command means unit outputs a command for turning off the laser output to ~~the~~ said laser power switching means circuit and, after the laser output is turned off, second to m-th gain adjustment values to be set in the servo system when second to m-th (m: integer not less than 2) laser powers are emitted from ~~the~~ said optical pickup are obtained by arithmetic operation based on the first gain adjustment value, and the second to m-th gain adjustment values are set in ~~the~~ said gain adjustment means

adjuster, and then, second to m-th offset adjustment values for canceling offsets that occur in the servo system are obtained, and the second to m-th laser powers, gain adjustment values, and offset adjustment values are stored in second to m-th storage areas provided in the said storage means, respectively, and

wherein during the actual operation, when the laser power is switched from the first laser power to an n-th laser power among the second to m-th laser powers, the first offset adjustment value and the n-th offset adjustment value are set in the said first offset adjustment means adjuster and the said second offset adjustment means adjuster, respectively, simultaneously with the switching of the laser power from the first laser power to the n-th laser power.

8. (Currently amended) An optical disk drive as defined in Claim 7, wherein ~~a tracking error signal generation method employed by the said tracking error signal generation means generator is operable to perform a push-pull tracking error signal generation method.~~

9. (Original) An optical disk drive as defined in Claim 7, wherein the first laser power is a laser power at a reading level, and the second to m-th laser powers are laser powers at erasing levels.